

Pre Calculus
Unit 4 Test Review

Name:
Date:

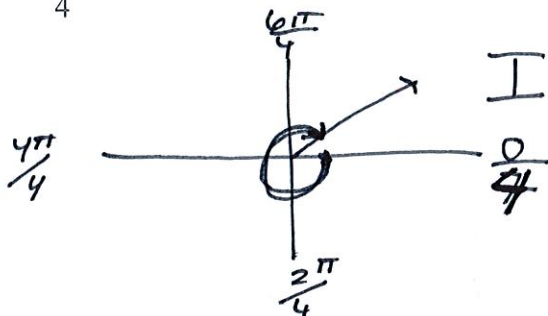
Convert the angle to radians / degrees and say what quadrant the angle falls in.

1. 112°

$$\frac{112\pi}{180} = \frac{56\pi}{90} = \frac{28\pi}{45}$$

$$2. \frac{7\pi}{10} \cdot \frac{180^\circ}{\pi} = 7 \cdot 18 = 126^\circ$$

3. Sketch a $-\frac{7\pi}{4}$ radian angle in standard position and identify what quadrant the terminal side falls in.



4. The point $(-1, \sqrt{3})$ lies on the terminal side of the angle. What are the six trig ratios? What is the measure of the angle?



$$\sin \theta = \frac{\sqrt{3}}{2}$$

$$\csc \theta = \frac{2}{\sqrt{3}}$$

$$\theta = \frac{2\pi}{3}$$

$$\cos \theta = -\frac{1}{2}$$

$$\sec \theta = -2$$

$$= 120^\circ$$

$$\tan \theta = -\sqrt{3}$$

$$\cot \theta = \frac{1}{-\sqrt{3}}$$

5. What is the radius of the unit circle? What is the circumference?

1 m

$$C = 2\pi \cdot r$$

$$C = 2\pi m$$

$$\approx 6.28 m$$

6. Find two angles that are coterminal with $2\pi/3$.

$$\frac{2\pi}{3} + \frac{6\pi}{3} = \frac{8\pi}{3}$$

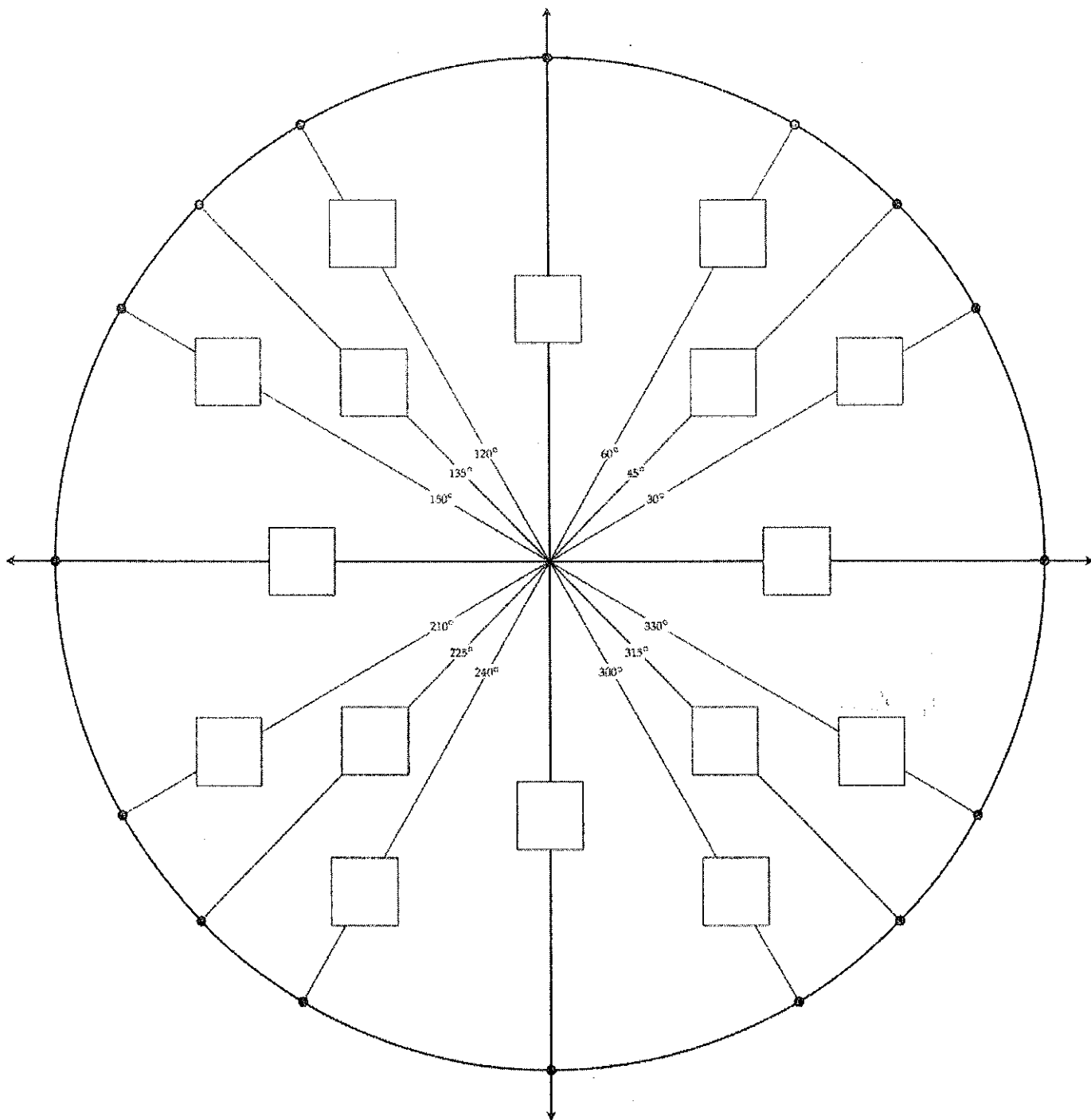
$$\neq -\frac{4\pi}{3}$$

$$\frac{7\pi}{12} + 2\pi$$

7. Find two angles that are coterminal with 150°

$$150^\circ \pm 360^\circ$$

$$510^\circ \quad -210^\circ$$



Use the unit circle to find the exact answers....

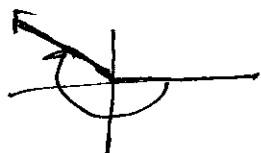
$$8. \sec \frac{7\pi}{6} = -\frac{2}{\sqrt{3}}$$

$$9. \cot \frac{-5\pi}{3} = \frac{x}{y} = \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{\sqrt{3}}$$

$$10. \sin\left(\frac{-3\pi}{2}\right) = 1$$

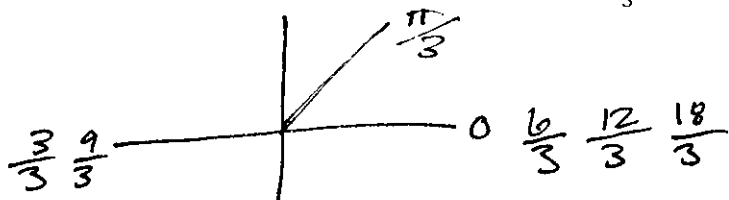
$$11. \sin\left(\frac{11\pi}{6}\right) = -\frac{1}{2}$$

$$12. \tan\left(\frac{5\pi}{4}\right) = -1$$



$$13. \sec\left(\frac{2\pi}{3}\right) = \frac{1}{x} = -2$$

14. Find all six trig functions of $\frac{19\pi}{3}$



$$\begin{aligned} \cos \theta &= \frac{1}{2} & \sec \theta &= 2 \\ \sin \theta &= \frac{\sqrt{3}}{2} & \csc \theta &= \frac{2}{\sqrt{3}} \\ \tan \theta &= \sqrt{3} & \cot \theta &= \frac{1}{\sqrt{3}} \end{aligned}$$

Find the two angles that produce:

$$15. \sin^{-1}\left(-\frac{\sqrt{3}}{2}\right)$$

$$\frac{5\pi}{3}, \frac{4\pi}{3}$$

$$16. \tan^{-1}(-1)$$

$\frac{y}{x} > \text{same}$

$$\frac{3\pi}{4}, \frac{7\pi}{4}$$

Evaluate the expression.

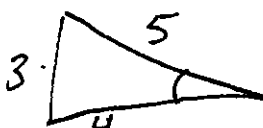
17. $\cos(\cos^{-1} \pi/3)$

$$\frac{\pi}{3}$$

calculator? 36.869
.7499

18) $\tan(\sin^{-1}(3/5))$

ratio
 $\frac{o}{h} = \frac{3}{5}$



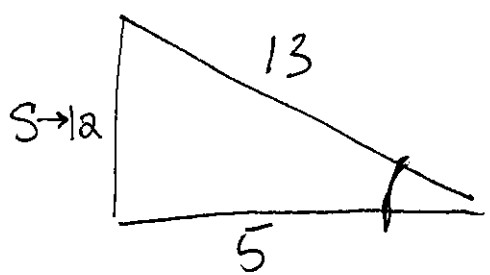
$$3^2 + 4^2 = 5^2$$

$$\sqrt{5^2 - 3^2} = \sqrt{16}$$

$$4$$

$$\tan \theta = \frac{3}{4}$$

19. The cosine of an angle on a triangle is $\frac{5}{13}$. Find all five other trig functions.



$$\sin \theta = \frac{12}{13}$$

$$\cos \theta = \frac{5}{13}$$

$$\tan \theta = \frac{12}{5}$$

10. Find the six trig functions for an angle if the terminal side passes through $(-5, -3)$

